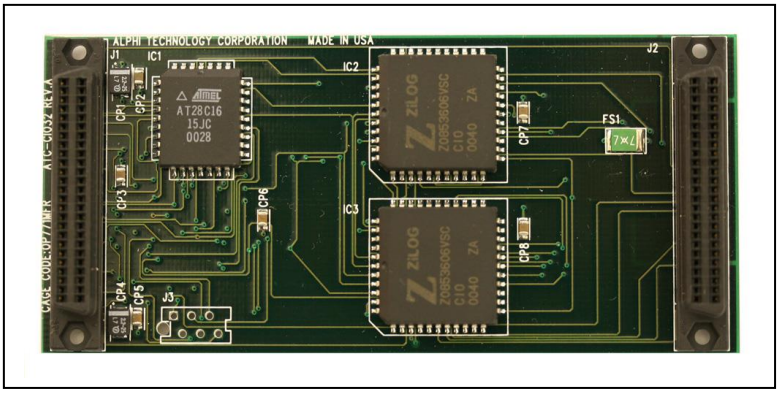
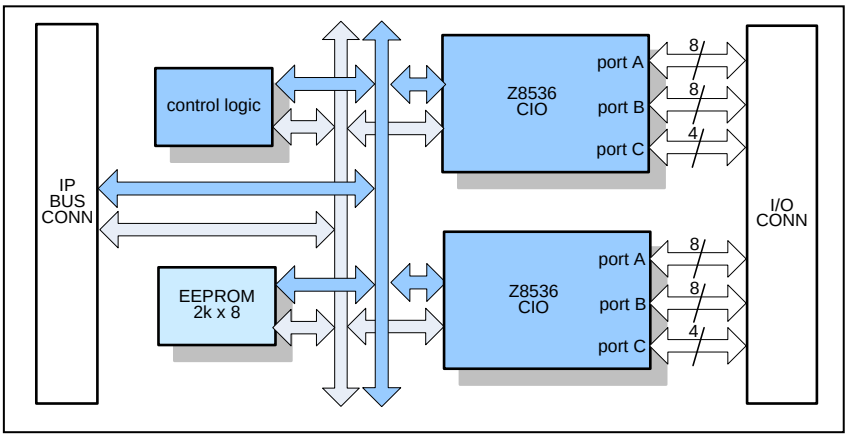
IP Counter/Timer & Parallel I/O

Features



- The IP-CIP-32 uses two Zilog Z8536 counter/timer and parallel I/O devices
- 16 bits of bidirectional, double buffered I/O from each CIO for a total of 32 bits can be bit programmable as input or output
- Six, 16-bit counter/timers total are available
- Timer port #1 and #2 take over 2 lines of the 8-bit port B
- Two special 4-bit ports for handshake support for port A and B and timer port #3 output
- All three timers can be linked together
- Multiple interrupt sources including pattern matching on ports A and B
- Total of 8 interrupt lines available
- 8 or 32 MHz clock
- 2 interrupts and 2 slave DMA IP bus lines
- VITA 4 compliant
- 2kbytes of EEPROM are used for board ID and user data storage



Block Diagram and Operational Overview

The **IP-CIO-32** IP board has two Z8536 CIO's from Zilog. The CIO consists of a CPU interface, three I/0 ports – A, B, and C - that consist of two general purpose 8-bit ports and one special purpose 4-bit port, three 16-bit counter/timers, an interrupt control logic block, and an internal control logic block.

Both ports A and B include pattern recognition logic which allows interrupt generation when a specific pattern is detected. The pattern recognition logic can be programmed to make the port function like a priority interrupt controller. These same two ports can be concantenated to form a 16-bit word with handshake.

The function of the special-purpose 4-bit port C depends upon the roles of ports A and B. Port C provides handshake lines when required by the other two ports. Port C also supports synchronization with DMA's or CPUs.

Port C has up to four port pins that can be used as dedicated external access lines for each counter/timer. Three different counter/timer output duty cycles are available – pulse, one-shot, and square-wave. The counter/timers can be programmed as either retriggerable or non-retriggerable.

A 2kbyte EEPROM is used for the board ID and user data.

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IP-CIO-32

IP Module

Applications:

This is a perfect solution for:

- Control systems

Software Support:

Z8536 CIO Device Specifications:

- Two independent 8-bit, double-buffered, bidirectional I/O ports A and B
- Special 4-bit purpose I/O port C
- Programmable polarity, programmable direction in bit mode, "pulse catchers", and programmable open-drain outputs for ports A and B
- Four handshake modes for port C supporting ports A and B, including 3- wire ala IEE488 or REQUEST/WAIT signal for high-speed data transfer (DMA, CPU, etc.)
- Flexible pattern recognition logic, programmable as a 16-vector interrupt controller
- Three independent 16-bit counter/timers with up to four external access lines per counter/timer – count input, output, gate, and trigger
- Three output duty cycles for the counter/timer – pulsed, one-shot, and square-wave
- All internal registers – command, status, and data) are readable and writable except for the status bits
- All data registers can be directly accessed in a single operation
- VIH input high voltage = 2.0VDC min
- VIL output low voltage = 0.8VDC max
- VOH output high voltage = 2.4VDC min
- VOL output low voltage = 0.4VDC with IOL = 2.0mA

Industry Pack Specifications:

- Meets ANSI/VITA 4-1995
- 8/32 MHz synchronous operation
- Supports ID, 128 byte I/O, interrupt. & 8 Mbyte memory spaces
- 2 Interrupts per module
- Two passive DMA channels are possible.
- Hardware self timed per IP module
- Triggered via system reset and software control
- Jumper or software time-out function
- 5, +/-12 volt reset-able fuse per IP

Mechanical: Environmental:

- Size – VITA 4 compliant
  1.8" x 3.9" or 46 mm x 99 mm
- Power – 1.0 watt
- Vibration – 0.5G, 20-2000 Hz rand
- Shock – 20G, 11 msec, ½ sine
- Weight – tbd
- MTBF – >250,000 hours

Operating Environment:

- Operating temperature
  Commercial: 0 to +70 ºC
  Optional: -25 ºC to +80 ºC
- Non-operating: -40 ºC to +85 ºC
- Airflow requirement – 5 CFM
- Humidity – 5 to 90% (non-cond)
- Altitude – 0 to 10,000 feet

VITA
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Ordering Information:

Part number:	IP-CIO-32	Dual Z8536 CIO-based Industry Pack module
	IP-CIO-32-1	Extended temperature range -40º to +85º C

Optional Accessories

Part number:	TB-50-HDR	50 pin terminal block and 1 meter flat ribbon cable
	CBL-HDR-HRS-50	50 pin, 1 meter flat ribbon cable, HRS header connector

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